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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,283	08/22/2006	Akihiro Suzuki	1680/48	8072
25297 7590 04/08/2011 JENKINS, WILSON, TAYLOR & HUNT, P. A. 3100 Tower Blvd. Suite 1200 DURHAM, NC 27707				
EXAMINER SCHIFFMAN, BENJAMIN A				
ART UNIT		PAPER NUMBER		
1742				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,283

Applicant(s)

SUZUKI, AKIHIRO

Examiner

BENJAMIN SCHIFFMAN

Art Unit

1742

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-9 and 11-26 is/are pending in the application.
- 4a) Of the above claim(s) 11-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-9, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The papers submitted on 25 February 2011, amending claims 1, 4-9, 25 and 26, are acknowledged.

Terminal Disclaimer

2. The terminal disclaimers filed on 25 February 2011 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of patent no. 7,101,504 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 8, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2003-16615 A) in view of Ohkoshi et al. (US 6,497,952 B1) and Leenslag et al. (Resorbable Materials of Poly(L-lactide). V. Influence of Secondary Structure on the Mechanical Properties and Hydrolyzability of Poly(L-lactide) Fibers Produced by a Dry-Spinning Method).

5. Regarding claim 1, Suzuki discloses a method for manufacturing drawn filament, comprising the steps of drawing an original filament to a draw ratio of 1000 times or more by tension of 1 MPa or less per single filament while to heating with an infrared beam (**see abstract and para. 11**), wherein the beam diameter is 4.3 mm (**see para. 41**), which when aimed at a fiber would be within a maximum of 2.15 mm, i.e. the radius, in an up and down axial direction from the center of the filament, which overlaps the claimed range (**see MPEP 2144.05**).

Additionally, Suzuki teaches that the process can be applied to natural fibers, such as silk, which are inherently biodegradable (see para. 15).

6. Suzuki does not does not appear to expressly disclose a plurality of beams.

7. However, Ohkoshi discloses a method of applying a infrared beam to a fiber in order to heat and draw the fiber, where the beam is directed through a lens to control the length of irradiated fiber, between 0.1 and 100 mm (see col. 5 l. 42-48), and that the beam is reflected back at the fiber, i.e. a plurality of beams, (see col. 7 l. 43-50).

8. At the time of invention, it would have been prima facie obvious to one of ordinary skill in the art to modify the method of Suzuki to include the beam control of Ohkoshi, in order to control the size of the irradiated region of the thread and control the temperature of the thread during drawing. Additionally one of ordinary skill in the art would be motivated to optimize the size and number of beam in depending on known process variables, such as throughput, fiber composition, and beam power. Further, at the time of invention, it would have been prima facie obvious to one of ordinary skill in the art to modify the method of Suzuki to include biodegradable filaments, because the specific type of filament is an intended use of the final filament, and a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Further, a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*,

535 F.2d 67, 190 USPQ 15 (CCPA 1976) and Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

9. Further, Suzuki does not appear to expressly disclose that the biodegradable fibers are synthetic.

10. However, Leenslag discloses hot drawing of a synthetic biodegradable polymer, e.g., poly(L-lactide) (PLLA), filaments (see pp. 2830-2831 EXPERIMENTAL).

11. At the time of invention, it would have been prima facie obvious to one of ordinary skill in the art to apply the method of Suzuki to the fibers of Leenslag, because it is known to hot draw PLLA filaments and hot drawing the filaments with the method of Suzuki would improve the PLLA filaments in the same way in which the synthetic filaments and natural filaments of Suzuki are improved.

12. Regarding claim 8, Suzuki discloses that multiple filaments are drawn simultaneously in the same beam (see para. 90).

13. Regarding claims 25 and 26, Leenslag discloses hot drawing of poly(L-lactide) (PLLA) filaments (see pp. 2830-2831 EXPERIMENTAL).

14. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2003-16615 A) in view of Ohkoshi et al. (US 6,497,952 B1) and Leenslag et al. (Resorbable Materials of Poly(L-lactide). V. Influence of Secondary Structure on the Mechanical Properties and Hydrolyzability of Poly(L-lactide) Fibers Produced by a Dry-Spinning Method) as applied to claim 1 above, further in view of Davis et al (US 4,101,525).

15. Suzuki does not appear to expressly disclose further heating and drawing the drawn filament in heating and drawing zones.

16. However, Davis discloses a method of drawing a filament (**see abstract**) wherein the drawn filament is subjected heating and drawing in zones (**see col. 15 l. 22 to col. 16 l. 6**).

17. At the time of invention, it would have been prima facie obvious to one of ordinary skill in the art to modify the method of Suzuki to include further drawing and heating of Davis, in order to improve the properties of the final filament (**see col. 13 l. 61 to col. 14 l. 52**).

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2003-16615 A) in view of Ohkoshi et al. (US 6,497,952 B1) and Leenslag et al. (Resorbable Materials of Poly(L-lactide). V. Influence of Secondary Structure on the Mechanical Properties and Hydrolyzability of Poly(L-lactide) Fibers Produced by a Dry-Spinning Method) as applied to claim 1 above, further in view of Tanaka et al. (US 5,506,041).

19. Regarding claim 9, Suzuki does not appear to expressly disclose collecting the filaments on a running conveyor.

20. However, Tanaka discloses a method of forming biodegradable filaments (**see abstract**) that are collected onto a conveyor (**see col. 9 l. 46-68**).

21. At the time of invention, it would have been prima facie obvious to one of ordinary skill in the art to modify the method of Suzuki to include collecting the filaments on a conveyor of Tanaka because, fibers are commonly collected on conveyors in order to form non-woven fabrics as is well known in the art.

Response to Arguments

22. Applicant's arguments with respect to claims 1 and 4-9 have been considered but are moot in view of the new ground(s) of rejection.
23. Applicant's arguments, see 15 and 16, filed 25 February 2011, with respect to the 35 U.S.C. § 103(a) rejection of claims 25 and 26, have been fully considered and are not persuasive.
24. Applicant argues that Leenslag et al. fails to provide a method for manufacturing drawn synthetic biodegradable filament. However, Leenslag discloses a method of hot drawing of poly(L-lactide) (PLLA) filaments, a biodegradable synthetic filament. The additional claimed steps are met by the primary and secondary references discussed in the rejection of claim 1 above. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Katayama et al. (US 6,552,123 B1) discloses drawing of synthetic biodegradable filaments (**see title/abstract 12:55-60**) which would render the instant claims unpatentable either alone or in combination with the above cited references.
26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN SCHIFFMAN whose telephone number is (571)

270-7626. The examiner can normally be reached on Monday through Thursday from 9AM until 4PM.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHRISTINA JOHNSON can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BENJAMIN SCHIFFMAN/
Examiner, Art Unit 1742

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1742